

REMARKS

Upon entry of this Amendment, claims 1-37 are pending for consideration by the Examiner. The Examiner's indication that claims 9 and 25-27 contain allowable subject matter is gratefully acknowledged.

The Applicants point out that the Examiner has initialed and returned with the Office action a copy of the supplemental Information Disclosure Statement filed on October 13, 2003. However, the Examiner has not returned an initialed copy of the four-page Information Disclosure Statement filed with the original application on September 8, 2003. The Applicants respectfully request an initialed copy of that Information Disclosure Statement for their records.

The Examiner has rejected claims 6 and 14 under 35 U.S.C. 112, second paragraph as being indefinite for containing a negative limitation. Reconsideration of these rejections is respectfully requested in light of M.P.E.P. 2173.05(i), which states "The current view of the courts is that there is nothing inherently ambiguous or uncertain about a negative limitation. So long as the boundaries of the patent protection sought are set forth definitely, albeit negatively, the claim complies with the requirements of 35 U.S.C. 112, second paragraph." The Applicants assert that claims 6 and 14 are clear and therefore definite.

The Examiner has rejected claims 1, 15, and 18 under 35 U.S.C. 102(e) as being anticipated by Wakeman (US 6,494,186). Specifically, the Examiner states that "The patent by Wakeman (6,494,186) shows an intake manifold (10) with an intake passageway (26). A fuel injector (20) is in communication with the intake passageway. At least a portion of the fuel injector is molded into the intake manifold."

The Applicants respectfully disagree with the Examiner's argument that Wakeman teaches that at least a portion of the fuel injector is molded into the intake manifold. Wakeman includes no teaching or suggestion that the injectors 20 are molded into the intake manifold 10. In fact, there is no discussion at all in Wakeman regarding how the injectors 20 are mounted to the manifold 10. Furthermore, Fig. 2 clearly shows a space or gap between

the outlet end of the injector and the inner wall or bore of the manifold into which the injector is inserted. Such a gap would not exist if the injector was molded into the manifold.

For all of these reasons, claims 1, 15, and 18 are allowable over Wakeman.

The Examiner has also rejected claims 1-8, 10-24, and 28-37 under 35 U.S.C. 102(e) as being anticipated by Lee, et al. (US 6,769,410). Specifically, the Examiner states that “The patent to Lee et al. (6,769,410) shows an intake manifold (24) with an intake passageway (26). A fuel injector (54) is in communication with the intake passageway, and at least a portion of the fuel injector is molded into the intake manifold.”

The Applicants respectfully disagree with the Examiner’s argument that Lee, et al. teaches that at least a portion of the fuel injector is molded into the intake manifold. Lee, et al. describes the problems associated with molding wire harnesses into plastic intake manifolds (see col. 1, lines 30-55), and is directed to the use of a carrier that is separate and distinct from the intake manifold so that no metallic or wire components are molded into the manifold, thereby simplifying assembly, repair and recycling of the intake manifold (see col. 1, line 66—col. 2, line 3). Thus, Lee, et al. teaches away from molding any metallic or wire components into the intake manifold.

In the multiple embodiments shown in Lee, et al., separate carriers 38 and 48 contain the molded-in electrical leads 30, 50, respectively. Fig. 6b appears to illustrate a coil assembly 32’ formed directly into the fuel module holder 39’ of the carrier 38 (see col. 4, lines 11-13). Fig. 7 and col. 4, lines 18-22 also describe overmolding an electrical lead 44 and coil assemblies 47 with a carrier assembly 42. However, col. 3, lines 45-47 specifically states “Assembly, repair, and recycling are greatly simplified as the carrier 38 is formed separate from the manifold 10.” This makes clear that Lee, et al. explicitly teaches away from molding anything metallic into the intake manifold itself. In all embodiments, the fuel injectors 16, or fuel modules 34, 40, which are supported by the carriers 38, 48, are simply inserted into apertures 11 in the intake manifold 10. There is no teaching or suggestion of molding any injectors into the intake manifold.

In referencing the fuel injector 54, the Examiner appears to be specifically pointing to the embodiment illustrated in Figs. 8-11 of Lee, et al. It is clear from Fig. 10 and col. 4, lines 54-63 that the fuel module assembly 54 is merely inserted into the module aperture 60 of the intake manifold 10, and that one or more seals 36' are utilized to seal the fuel module assembly 54 into the module aperture 60. The fuel module assembly 54 is clearly not molded into the intake manifold 10.

Independent claims 1 and 15 both recite, among other things, that at least a portion of the fuel injector is molded into the intake manifold. This feature is not taught or suggested by Lee, et al.

Dependent claims 2-14 depend from claim 1 and are allowable for the reasons discussed above and for other reasons. For example, dependent claim 3 recites, among other things, that the fuel injector is entirely molded into the intake manifold. This feature is not taught or suggested in Lee, et al.

Dependent claim 4 recites, among other things, that a fuel rail defines the fuel passageway and at least a portion of the fuel rail is molded into the intake manifold. Lee, et al. does not teach or suggest a separate fuel rail molded into the intake manifold, but rather discloses only an integrally molded "fuel rail 22" formed by molding a passageway into the intake manifold.

Dependent claim 6 recites, among other things, that the fuel injector is coupled to the fuel rail without using a seal adjacent the interface. Lee, et al. discloses the use of seals 36 at the injector/fuel passage interface.

Dependent claim 11 recites, among other things, that the fuel injector is at least partially molded into the middle shell of the intake manifold. As Lee, et al. does not teach or suggest the molding of a fuel injector into any portion of the intake manifold, it certainly does not teach or suggest at least partially molding the fuel injector into a middle shell of an intake manifold.

Dependent claim 12 recites, among other things, that the electrical connector is at least partially molded into the intake manifold. As discussed above in detail, Lee, et al. explicitly teaches away from molding the electrical connector into the intake manifold.

Dependent claim 13 recites, among other things, that a fuel outlet of the injector is molded into the intake manifold. This feature is not taught or suggested by Lee, et al.

Dependent claims 17, 19, 21, 22, 28, and 29 depend from claim 15 and contain similar features to those already discussed above, and are allowable for the same reasons. Additionally, dependent claim 20 recites, among other things, that the fuel injector is coupled to the fuel rail by one of laser welding, TIG welding, and brazing. This feature is not taught or suggested by Lee, et al.

Independent claim 30 recites, among other things, a fuel rail assembly including a fuel injector and a fuel rail. The fuel injector has a fuel inlet and a fuel outlet, and an interface between the fuel passageway in the fuel rail and the fuel inlet is molded into the intake manifold. The fuel outlet is also molded into the intake manifold. Additionally an electrical connector is at least partially molded into the intake manifold. These features are not taught or suggested by Lee, et al.

Dependent claim 31 depends from claim 30 and recites a second fuel rail assembly at least partially molded into the intake manifold. This feature is also not taught or suggested by Lee, et al.

Independent claim 32 recites, among other things, an intake manifold defining an air path for providing intake air to the cylinder head, a fuel path for providing fuel to the cylinder head, and an electrical path for providing power to a fuel injector. Each of the air path, the fuel path, and the electrical path are at least partially molded into the intake manifold. Lee, et al. explicitly teaches away from molding any electrical path into the intake manifold.

Dependent claims 33, 35, and 37 depend from claim 32, further define the fuel path and the electrical path, and recite features that are allowable for reasons already discussed above.

For all of these reasons, and because Lee, et al. explicitly teaches away from molding anything metallic or with wires into the intake manifold, claims 1-37 are allowable over Lee, et al.

The Applicants believe that the rejections based on Wakeman and Lee, et al. are improper and are fully addressed by the above Remarks. However, the Applicants expressly reserve the right to swear behind one or both of Wakeman and Lee, et al. in the future.

Reconsideration of the rejections and allowance of claims 1-37 are respectfully requested.

The undersigned is available for telephone consultation at any time.

Respectfully submitted,



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